First Executive Session
Run IIb Detector Upgrade
Director's Review

August 12-15, 2002

L. Edward Temple, Jr.

Agenda for Exec Session

- Charge to Reviewers
  - PAC looking to TRC as part of this review
- Review Agenda
- Report Structure
  - Table of Contents
    - Findings, Comments, and Recomendations
  - Cost / Contingency Table
- Assignments
  - SubCommittees and Chairs
  - Technical ReviewerAssignments
- Discussion

Intro to Charge

The CDF and D0 collaborations are preparing to start upgrade projects that will make it possible for the experiments to continue operating at higher and higher luminosities through 2008. The systems needing the most attention for higher-luminosity running are the silicon detectors and the data-acquisition/trigger system. The collaborations have submitted Technical Design Reports (TDRs) for these and other required upgrades. The current schedule calls for installation of the new silicon and other detector components in 2005 or early 2006. For the success of the Tevatron Run II program, it is imperative that both the D0 and CDF upgrades be accomplished on this time scale.

This Director's Baseline Review Committee (BRC) has the primary goal of helping the the upgrade projects in their preparation to successfully complete a DOE Baseline Review. In this regard, the BRC should:

Examine the scope of the proposed upgrades

Determine whether 1) the scope is appropriate for optimizing the research reach of the collider detectors, within the guidelines set forth by the Fermilab Directorate, in this time period and 2) the scope is well defined and understood by key participants. Assess the plans for carrying out the design, prototyping, fabrication, assembly and testing of the proposed upgrades.

Assess the Total Project Cost estimate for the upgrades

Review and assess the detailed "basis of estimate" for the upgrades (both for the R&D components and the "on-project" components). Understand the risks involved in carrying out the projects and assess the cost contingencies that are being proposed.

Assess the realism of the schedule

Is there a detailed schedule, including a critical path, for completing the project? Are milestones appropriate in number and type identified so that both the project teams, Fermilab management, and DOE can effectively track and manage progress? Based on past experience, can the proposed schedules be met? Are appropriate schedule contingencies provided? Is there a "resource loaded schedule" and plan for providing the needed resources (M&S and technical support staff and physicists)? Have techniques such as forward funding by collaborators and phased funding of large contracts been appropriately incorporated into the planning? Does the anticipated funding profile support the resource requirements?

Comment on the proposed management arrangements

Comment on the proposed management arrangements for the upgrades. Assess the probable effectiveness of the proposed management arrangements; the internal project structure, coordination between experiments, coupling to the Particle Physics Division and the Directorate and coordination with the Beams Division. Review and assess the formal required DOE documentation: Acquisition Plan, Project Management Plan, Project Execution Plan (as it sets requirements on the PMP), in addition to Scope, Cost, and Schedule Performance Baseline (which should be "conservatively" derived from the information presented in response to the bullets above) and plans for the use of (and progress toward meeting) cost and schedule reporting tools.

Physics Advisory Committee

- Recommended Stage I Approval
- Identified several areas needing work
- Expanded greatly on these areas in their report
- Relying heavily on the TRC during this review to assess progress since June
- Appropriate Sections of their Report linked from Review web page

Review Agenda

See Agenda Link on the Review web page

Report Structure

- Review findings, assessments, and recommendations should be presented in writing at a closeout with the Collaborations and Fermilab management.
- Two Sections
  - Technical
  - Cost, Schedule, Management
- Written with
  - Findings
  - Comments and
  - Recommendations

Findings, Comments, and Recommendations

- Findings
  - Findings are statements of fact that summarize noteworthy information presented during the review.
- Comments
  - Comments are judgment statements about the facts presented during the review. The reviewers' comments are based on their experiences and expertise.
  - The comments are to be evaluated by the project team and actions taken as deemed appropriate.
- Recommendations
  - Recommendations are statements of actions that should be addressed by the project team.
  - A response to the recommendation is expected and that the actions taken would be reported on during future reviews.

Report Table of Contents

Generic Outline
Jim providing details

Writing Assignments
Technical

Director's Baseline Review for Run 2b Upgrades
Upgrade Topics and Proposed Assignments

1. CDF Upgrades	
Silicon vertex tracker (SVT)	
Electrical (biasing, SVX4, hybrids, PCBs, LV power)	H. Sadrozinski
Mechanical (sensors, mounting, cabling, cooling)	H. Tajima
System planning, testing, integration	F. Forti
Calorimeter	
Central Preradiator Replacement	J. Pilcher
Timing on PMTs for EM Cal.	J. Pilcher
TDC replacement for the Central Outer Tracker (COT)	M. Selen
Fast track processor (XFT)	D. Marlow
Online DAQ Computing	M. Selen
Level 2 decision crate (L2)	L. Bauerdick
Event builder switch and Level 3 processor farm	L. Bauerdick
Installation planning	J. Pilcher
2. D0 Upgrades	
Silicon vertex tracker (SVT)	
Electrical (biasing, SVX4, hybrids, PCBs, LV power)	H. Sadrozinski
Mechanical (sensors, mounting, cabling, cooling)	H. Tajima
System planning, testing, integration	F. Forti
Level 1 Tracking Trigger	D. Marlow
Level 1 Calorimeter Trigger	J. Pilcher
Level 1 Calorimeter-Track Matching	M. Selen
Level 2 Beta Trigger	L. Bauerdick
Level 2 Silicon Track Trigger	M. Selen
DAQ, Level 3 farm processors and online system	L. Bauerdick
Installation planning	D. Marlow

Review SubCommittees

Run IIb Detector Upgrades Director's Review				
Sub-Committee Breakouts				
		Silicon Cost & Schedule	Non-Silicon Cost & Schedule	
	Technical Review SubCommittee	Review SubCommittee	Review SubCommittee	
	Jim Pilcher, U of Chicago - Chair	Tony Chargin, SNS - Chair	Joel Butler, Fermilab - Chair	
	Francesco Forti, Pisa (pt)	Giorgio Apollinari, Fermilab	Ed Temple	
	Hiro Tajima, SLAC	Mark Reichanadter	Dean Hoffer	
	Hartmut Sadrozinski(pt)	Hiro Tajima (pt)	Jim Pilcher (pt)	
	Daniel Marlow		Daniel Marlow (pt)	
	Mats Selen(pt)			
	Lothar Bauerdick			

Report Format

See DRAFT Report Format on Review web page.

This draft has generic placeholders for the Technical Report section. Jim Pilcher, Chairman of the Technical SubCommittee will provide Outline at the Review on Monday.

File Transfers

Material to be emailed to Marilyn Smith

At

Oboe@fnal.gov

As soon as humanly possible. We want to give the presentations at the Closeouts from a common notebook computer.

Cmte Cost & Contingency

There will be a table such as this for each project

Detector Cost Estimate									
	Project Estimate				Committee Estimate				
	Base	Cont	Cont		Base	Cont	Cont		
WBS	Estimate	%	$	Total	Estimate	%	$	Total	
1.1 Silicon									
1.1.1									
1.1.2									
1.1.N									
1.2									
1.3									
1.N									
Total									

Discussion

- Questions and Answers